



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/797,826	03/10/2004	Dieu Dai Huynh	AVERP3525USB	1916

7590 09/23/2008
Heidi A. Boehlefeld
Renner, Otto, Boisselle & Sklar, LLP
Nineteenth Floor
1621 Euclid Avenue
Cleveland, OH 44115-2191

EXAMINER

GILLESPIE, BENJAMIN

ART UNIT	PAPER NUMBER
----------	--------------

1796

MAIL DATE	DELIVERY MODE
-----------	---------------

09/23/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/797,826	Applicant(s) HUYNH, DIEU DAI	
	Examiner BENJAMIN J. GILLESPIE	Art Unit 1796	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 July 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 7-10, 12 and 13 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 7-10, 12 and 13 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 7/14/2008 has been entered.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 7-8, 10, 12-13 are rejected under 35 U.S.C. 102(b) as being anticipated by Reischl et al ('095). Reischl et al teach an aqueous dispersion comprising (A) polyether and (B) polyester based polyurethane resin, wherein each resin is the reaction product of polyol and aliphatic diisocyanate (Abstract; col 2 lines 3-6, and 27). In particular (A) is based on polyethylene oxide, which commonly known in the art to be hydrophilic; (B) contains salt groups, which render said polyester water-dispersible, and both (A) and (B) are dispersed in the absence of solvent in amounts that correspond to applicants' claimed amounts (Col 1 lines 24-50; col 5 lines 47-62). Reischl et al explain the separate resins provide polyurethane that exhibits improved dispersion stability and the ability to re-disperse quickly if the resin settles (Col 1 lines 10-23). Although patentees do not explicitly teach the polyurethane useful in image transfer

layers, based on a composition that is analogous claims, the position is taken that the polyurethane of Reischl et al would inherently perform as a dye transfer layer.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 7-10, 12 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schafheutle et al (U.S. Patent 5,334,690) in view of Bagaglio et al (EP 0,358,328) and Ozawa et al (US PG Pub 2002/0176968). Schafheutle et al teach aqueous polyurethane coatings based on solvent free, water-dispersible prepolymers and polyfunctional aziridine cross-linker (Abstract; col 5 lines 15-27, 53-55; col 7 lines 14-15, 19). In particular, the prepolymers are the reaction product of polyisocyanate and ionic group containing (a) polyether and (b) polyester polyol. Patentees fail however, to teach separate prepolymers based solely on polyester and polyether respectively, as well as their corresponding amounts (Col 1 lines 4-12).

4. Bagaglio et al also teach polyurethane based on polyester and polyether based prepolymers, and in said polyurethane is preferably synthesized by "combining a polyester prepolymer and a polyether prepolymer which have been made separately," since "no compatibility of the polyester polyol and the polyether polyol is required," i.e. separate prepolymers increase homogeneity (Abstract; page 3 lines 15-21). Therefore, it would have been obvious to create separate polyester and polyether prepolymers in Schafheutle et al since Bagaglio et al teach it results in a polyurethane having decreased anisotropy. However, neither

Art Unit: 1796

Schafheutle et al nor Bagalio et al teach or render obvious ratios of (a) and (b) for aqueous polyurethane coatings.

5. Ozawa et al teach aqueous polyurethane coatings based on water dispersible prepolymers that are the reaction product of polyisocyanate, (a) polyether polyol, and (b) polyester polyol (Abstract, paragraph 11). In particular, Ozawa et al teach that the amount of polyether relative to polyester in the polyurethane backbone controls the "surface feeling and gloss" of the resulting coating, i.e. the ratio of (a):(b) is a result effective variable (Paragraph 24). Therefore, it would have been obvious to arrive at applicants' claimed range of (a):(b) since Ozawa et al establish said ratio is a result effective variable for analogous polyurethane coatings, and it has been held that discovering an optimum value for a result effective variable involves only routine skill in the art. *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

6. Finally, although the prior art does not explicitly state the polyurethane is useful in image transfer layers, the examiner takes the position that one of ordinary skill would reasonably expect said polyurethane to exhibit the claimed limitations since it is useful in printing inks and has a composition analogous to the claims.

7. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Reischl et al ('972) in view of Rhoades et al ('824). Aforementioned, Reischl et al teach water-dispersible polyurethane that consists of polyether and polyester based resins and multi-functional chain extender; however patentees are silent in teaching chain extender that consists of polyaziridine (Col 1 lines 36-38).

8. Rhoades et al teach a water dispersible polyurethane composition that is the reaction product of an isocyanate-terminated prepolymer and multi-functional cross-linker (Abstract; col

Art Unit: 1796

6 lines 56-62). In particular, the chain extenders consist of compounds such as ethylene diamine, diethylene triamine, and polyaziridine, wherein the polyaziridine provides superior intra-molecular cross-linking, which provides improved solvent resistance for the cured coating (Col 7 lines 6-7, 36-38, and 51-52). Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to include polyaziridine as the cross-linking agent in Reischl et al based on motivation that both compositions are water-dispersible polyurethanes and polyaziridine improves the performance properties of the resulting cured coating.

Response to Arguments

9. Applicant's arguments, filed 7/14/2008, with respect to the rejection of:
 - a. Claims 7-8, 10, 12, and 13 as being unpatentable over unpatentable over Ramello et al ('972) and Otto Bayer et al ('310) in view of Reischl et al ('095), and
 - b. Claim 9 as being unpatentable over Ramello et al ('972) and Otto Bayer et al ('310) in view of Reischl et al ('972) in further view of Rhoades et al ('824).
10. Have been fully considered and are persuasive. The rejections have been withdrawn.
11. Applicant's arguments filed 7/14/2008 with respect to the rejection of:
 - a. Claims 7-8, 10, 12-13 as being anticipated by Reischl et al ('095), and
 - b. Claim 9 as being unpatentable over Reischl et al ('972) in view of Rhoades et al ('824).
12. Have been fully considered but they are not persuasive. Applicants argue the claimed invention is not anticipated or rendered obvious by the prior art because Reischl et al requires the

Art Unit: 1796

presence of solvent in the blend of water dispersible polyurethane resins; the examiner disagrees.

It is noted that column 5 lines 24-50 state that the two resins are combined in the presence of solvent, however upon a proper and full reading of column 5, lines 50+, one would understand that the final aqueous dispersion does not contain solvent since the blend of polyurethane resin have "the solvent is removed," i.e. Reischl et al clearly teach a blend of two different water dispersible polyurethane resins having **no** solvent present. Therefore, the examiner maintains the rejection.

Conclusion

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to BENJAMIN J. GILLESPIE whose telephone number is (571)272-2472. The examiner can normally be reached on 8am-5:30pm. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vasu Jagannathan can be reached on 571-272-1119. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

14. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Application/Control Number: 10/797,826
Art Unit: 1796

Page 7

/Rabon Sergent/
Primary Examiner, Art Unit 1796

B. Gillespie